

O I P E JC177
MAR 01 2004
PATENT & TRADEMARK OFFICE

Image AF/2823

TRANSMITTAL LETTER
(General - Patent Pending)

Docket No.
SEC.506

In Re Application Of: Byoung-Taek LEE et al.

Serial No.
09/276,803

Filing Date
26 March 1999

Examiner
Berezny, Neal

Group Art Unit
2823

Title: **METHOD FOR MANUFACTURING CAPACITOR OF SEMICONDUCTOR DEVICE HAVING
DIELECTRIC LAYER OF HIGH DIELECTRIC CONSTANT**

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith is:

SUPPLEMENTAL APPEAL BRIEF

in the above identified application.

- No additional fee is required.
- A check in the amount of _____ is attached.
- The Director is hereby authorized to charge and credit Deposit Account No. as described below.
 - Charge the amount of _____
 - Credit any overpayment.
 - Charge any additional fee required.



Signature

Dated: 1 March 2004

KENNETH D. SPRINGER
REG. NO.: 39,843

VOLENTINE FRANCOS, PLLC
12200 SUNRISE VALLEY DRIVE, SUITE 150
RESTON, VA 20191

TEL. NO.: (703) 715-0870

I certify that this document and fee is being deposited on _____ with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signature of Person Mailing Correspondence

CC:

Typed or Printed Name of Person Mailing Correspondence



Serial Number 09/276,803

SEC.506

Appeal Brief Dated 1 March 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:

Byoung-taek LEE et al.

Group Art Unit: 2823

Serial No.: 09/276,803

Examiner: Neal BEREZNY

Filed: 26 March 1999

METHOD FOR MANUFACTURING
CAPACITOR OF SEMICONDUCTOR
DEVICE HAVING DIELECTRIC
LAYER OF HIGH DIELECTRIC
CONSTANT

SUPPLEMENTAL APPEAL BRIEF

U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, Mail Stop Appeal Brief - Patents
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Sir:

Supplemental to the Appeal Brief filed on 27 February 2004 in response to the FINAL rejection of all of the pending claims 1, 2, 4, 5, 7-16, and 18-20 in the Office Action dated 29 September 2003, and in support of the "Notice of Appeal" filed on 29 December 2003, Applicants hereby submit this Supplemental Appeal Brief.

By this Supplemental Appeal Brief, Applicants correct two typographical errors in the Appeal Brief one each on pages 9 and 13.

In particular, on page 9 of the Appeal Brief, the last full paragraph beginning at line 18, should read:

“Furthermore, as noted above, the first and second post-annealings of claim 9 are performed in completely different environments. The first post-annealing of claim 9 is performed in an inert environment, while the second post-annealing of claim 9 is performed in an oxygen environment.”

Also, on page 12 of the Appeal Brief, the paragraph beginning on line 5 should read:

“Furthermore, as noted above, the first and second post-annealings of claim 1 are performed in completely different environments. The first post-annealing of claim 1 is performed in an inert environment, while the second post-annealing of claim 1 is performed in an oxygen environment.”

Applicants have also attached to this Supplemental Appeal Brief replacement sheets for pages 9 and 12 of the Appeal Brief. Applicants regret any confusion engendered by these errors.

Serial Number 09/276,803
SEC.506
Appeal Brief Dated 1 March 2004

Accordingly, entry of this Supplemental Appeal Brief is respectfully requested.

Respectfully submitted,

VOLENTINE FRANCOS, P.L.L.C.

Date: 1 March 2004

By:



Kenneth D. Springer
Registration No. 39,843

VOLENTINE FRANCOS, P.L.L.C.
12200 Sunrise Valley Drive, Suite 150
Reston, Virginia 20191
Telephone No.: (703) 715-0870
Facsimile No.: (703) 715-0877

electrode" - second anneal (1) (step 94) and second anneal (2) (step 96).¹ Watanabe does not disclose that the second anneal (2) (step 96) is performed "at a second temperature lower than the first temperature" at which the second anneal (1) (step 94) is performed. Indeed, col. 15, lines 12-14 clearly state that "[t]he second anneal is preferably performed in an electric furnace at a temperature" Thus, Watanabe teaches that the second anneal (which includes both steps 94 and 96) is performed at a (singular) temperature. This is in direct contrast to the method of claim 9 where the second post-annealing (e.g., step 96 of Watanabe) is performed at a temperature that is lower than the temperature at which the first post-annealing (e.g., step 94 of Watanabe) is performed.

Therefore, the second anneal (1) (step 94) and second anneal (2) (step 96) of Watanabe cannot correspond to the first and second post-annealings of claim 9.

So, for at least this reason, Applicants respectfully submit that claim 9 is clearly patentable over Watanabe under 35 U.S.C. § 102.

Furthermore, as noted above, the first and second post-annealings of claim 9 are performed in completely different environments. The first post-annealing of claim 9 is performed in an inert environment, while the second post-annealing of claim 9 is performed in an oxygen environment.

Watanabe does not disclose that the second anneal (2) (step 96) is performed in

¹ Watanabe clearly discloses that the annealing step 92 is performed before forming the plate electrode, and therefore it cannot correspond to any of the post-annealing steps of claim 9 (see FIG. 1).

performed *in-situ*, does not remedy this shortcoming of Watanabe.

So, for at least this reason, Applicants respectfully submit that claim 1 is clearly patentable over any possible combination of Watanabe and Ping under 35 U.S.C. § 103.

Furthermore, as noted above, the first and second post-annealings of claim 1 are performed in completely different environments. The first post-annealing of claim 1 is performed in an inert environment, while the second post-annealing of claim 1 is performed in an oxygen environment.

Watanabe does not disclose that the second anneal (2) (step 96) is performed in a different environment than that at which the second anneal (1) (step 94) is performed. Indeed, Watanabe teaches that the second anneal (which comprises both steps 94 and 96) should be performed in an oxygen environment (see col. 15, lines 35-39).

So, for at least this additional reason, Applicants respectfully submit that claim 1 is clearly patentable over any possible combination of Watanabe and Ping under 35 U.S.C. § 103.

Finally, neither Watanabe and Ping disclose performing two annealing processes under two very different environments (inert environment, and oxygen environment) *in situ*. So no combination of Watanabe and Ping could produce the method of claim 1.

Moreover, to the extent that the Examiner is taking “Official Notice” that it